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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,649	07/05/2001	Masaaki Ando	9982-21US (1108US)	7728

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2005 MARKET STREET, SUITE 2200  
PHILADELPHIA, PA 19103-7013

EXAMINER

KIM, SUN U

ART UNIT PAPER NUMBER

1723

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/899,649

Applicant(s)

ANDO ET AL.

Examiner

John Kim

Art Unit

1723

-- Th MAILING DATE of this communication appears on th cover sheet with the correspond nce address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 15-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 4, 9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. Claims 15-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 7.
2. Claims 1-3, 6-8 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,190,557 (hereinafter referred to as Hisada et al) in view of U.S. Patent No. 5,376,278 (hereinafter referred to as Salem). Hisada et al teach system and method of running a spiral wound membrane module, comprising a pressure vessel (10) having a raw liquid inlet (13) and one or plurality of spiral envelope separation membranes (1) wound on the outer peripheral surface of a perforated hollow pipe (2) and allowing back wash reverse filtration under low back pressure since the separation membranes are low pressure reverse osmosis membranes which are run at 10 kgf/sq. cm or lower i.e. less than 0.98 MPa (see figures 1-4; col. 13, line 8 – col. 14, line 65) comprises the step of introducing washing liquid i.e. permeate into a permeate outlet (14) connected to the perforated pipe (2) for performing a back wash reverse filtration, axially feeding raw liquid through separation membrane (1) and taking out axially fed raw liquid through raw liquid outlet (15) (see figures 1-4; col. 13, line 66 - col. 14, line 61). Claims 1-3, 6-8 and 12-14 essentially differ from the system and method of Hisada et al in reciting the step and gas injection means of injecting gas of not more than 0.3 MPa from at least one opening end of the perforated hollow pipe. Salem teaches system and method of running a spiral wound membrane elements with perforated central core (160) comprising backwashing membrane element by feeding water and air via air conduit (60) thorough a perforated center such that water and air passes radially outwardly through the membrane to dislodge particulates on the membrane (see figures 1-2; col. 7, lines 26-27, 54-57; col. 13, line 9 - col. 14, line 35; col. 16,

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lines 7-45). It would have been obvious to a person of ordinary skill in the art to modify the system and method of Hisada et al to incorporate air injection system and method of Salem to improve removal of contaminants on membrane which operates at low pressure.

3. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisada et al in view of Salem as applied to claims 5 and 6 above respectively, and further in view of U.S. Patent No. 6,565,747 (hereinafter referred to as Shintani et al). Hisada et al teach that separation membrane is formed by bonding the membranes (7) on both sides of a permeate spacer (6) (see col. 13, lines 23-31). Claims 5 and 11 essentially differ from the method of Hisada et al in view of Salem in reciting that permeable membrane body is bonded to the surface of the porous sheet material. Shintani et al teach a spiral wound type separation membrane which is formed by superposing separation membrane (2) on both surfaces of a permeated liquid passage forming member (3) i.e. permeate spacer which is a net of tricot-weaving fibers (see col. 7, lines 27-47; col. 10, lines 57-68). It would have been obvious to one skilled in the art at the time the invention was made to use a conventional permeate spacer of porous net or sheet of Shintani et al to support the membrane of Hisada et al in view of Salem.

4. Claims 4 and 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

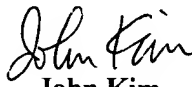
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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is (703) 308-2350. The examiner can normally be reached on weekdays from 7:00 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for official response after final action is (703) 872-9311, and the fax phone number for all other official faxes is (703) 872-9310.

When sending a draft amendment by fax, please mark the paper as "DRAFT"; otherwise, mark the paper "OFFICIAL". This will expedite the processing of the paper.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

  
John Kim  
Primary Examiner  
Art Unit 1723

J. Kim  
August 6, 2003